

CLAIMS

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What Is Claimed Is:

1. An improved valve control assembly for controlling the position of a valve, comprising:

a motor drive operatively connected to actuate said valve, said motor drive further comprising a feedback generator for generating motor feedback signals; and

a valve drive in communication with said motor drive, said valve drive configured to generate position commands for said motor drive and said valve drive further configured to receive said motor feedback signals.

2. The assembly of Claim 1, further comprising an internal valve command conduit for carrying said commands and said signals between said motor drive and said valve drive.

3. The assembly of Claim 2, wherein said valve drive further comprises a summing junction for summing said feedback signals and said position commands and responsively generating resultant position commands.

4. The assembly of Claim 3, wherein said summing junction, said internal valve command and said feedback signal generator comprise a valve/motor drive feedback system.

5. The assembly of Claim 4, further comprising a housing, said motor drive, said valve/motor drive feedback system and said valve drive enclosed in said housing.

6. An improved valve control assembly for controlling the position of a valve, said valve comprising a valve stem for actuating said valve, the valve control assembly comprising:

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a motor drive assembly for actuating said valve stem, said motor drive assembly further comprising a position feedback signal generator;

a valve drive in communication with said motor drive assembly, said valve drive configured to send position command signals to said drive assembly and further to receive signals generated by said position feedback signal generator; and

a valve/motor drive feedback system interconnecting said motor drive assembly and said valve drive.

7. The valve control assembly of Claim 6, wherein said drive assembly comprises a motor drive attached to said valve stem.

8. The valve control assembly of Claim 7, wherein said drive assembly further comprises reduction gear means operatively attached between said motor drive and said valve stem.

9. A process for controlling the pressure within a chamber, comprising the steps of:

generating a pressure sensor signal responsive to the pressure in said chamber;

generating a step command signal responsive to said pressure sensor signal and a tool logic signal;

generating a direction/speed command signal responsive to said step command signal and a valve position feedback signal;

actuating a valve responsive to said direction/speed command signal, said valve in fluid communication with said chamber; and

generating said valve feedback signal responsive to the position of said valve.

10. The process of Claim 9, wherein said valve actuating step comprises actuating a valve stem, and said valve stem actuating and said valve feedback signal generating comprise an actuating/feedback step.

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11. The process of Claim 10, wherein said actuating/feedback step is conducted by a drive assembly, said drive assembly comprising a motor drive attached directly to said valve stem.

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13. The process of Claim 12, wherein said drive assembly conducting said actuating/feedback step further comprises said motor drive being attached directly to said valve stem.

14. A process for controlling the fluid flow through a conduit, comprising the steps of:

generating a flow sensor signal responsive to the flow in said conduit;

generating a step command signal responsive to said flow sensor signal and a tool logic signal;

generating a direction/speed command signal responsive to said step command signal and a valve position feedback signal;

actuating a valve responsive to said direction/speed command signal, said valve in fluid communication with said conduit; and

generating said valve feedback signal responsive to the position of said valve.

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15. The process of Claim 14, wherein said valve actuating step comprises actuating a valve stem, and said valve stem actuating and said valve feedback signal generating comprise an actuating/feedback step.

16. The process of Claim 15, wherein said actuating/feedback step is conducted by a drive assembly, said drive assembly comprising a motor drive attached directly to said valve stem.

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17. The process of Claim 16, wherein said drive assembly conducting said actuating/feedback step further ~~comprises~~^E a motor drive.

18. The process of Claim 17, wherein said drive assembly conducting said actuating/feedback step further ~~comprises~~^E said motor drive being attached directly to said valve stem.

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